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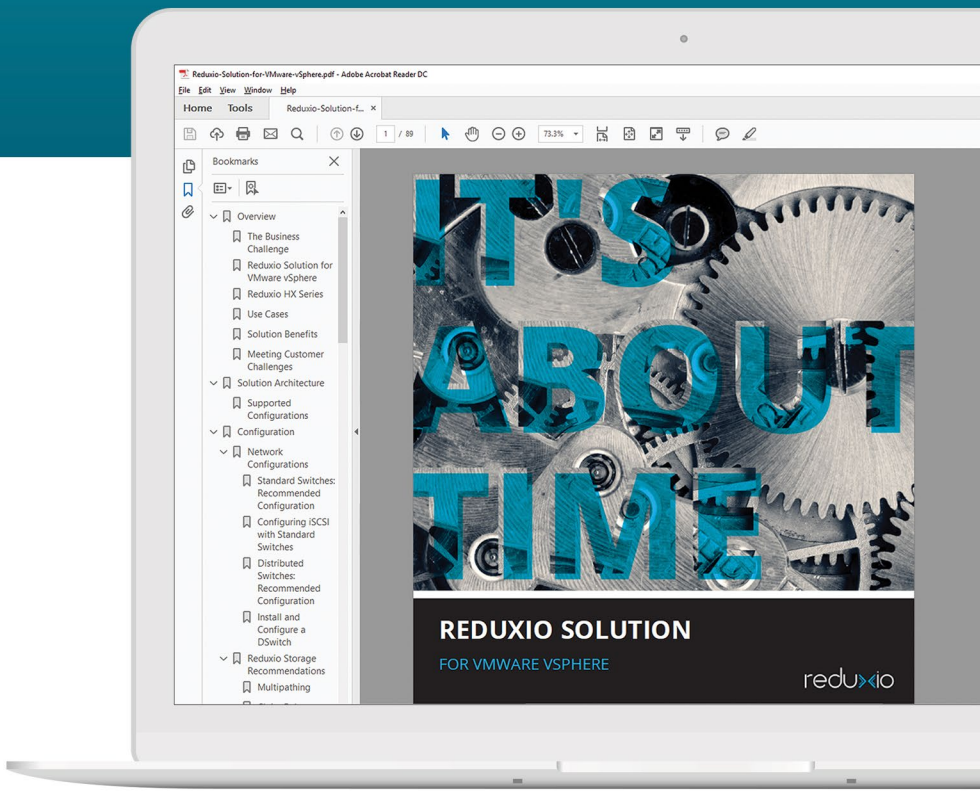

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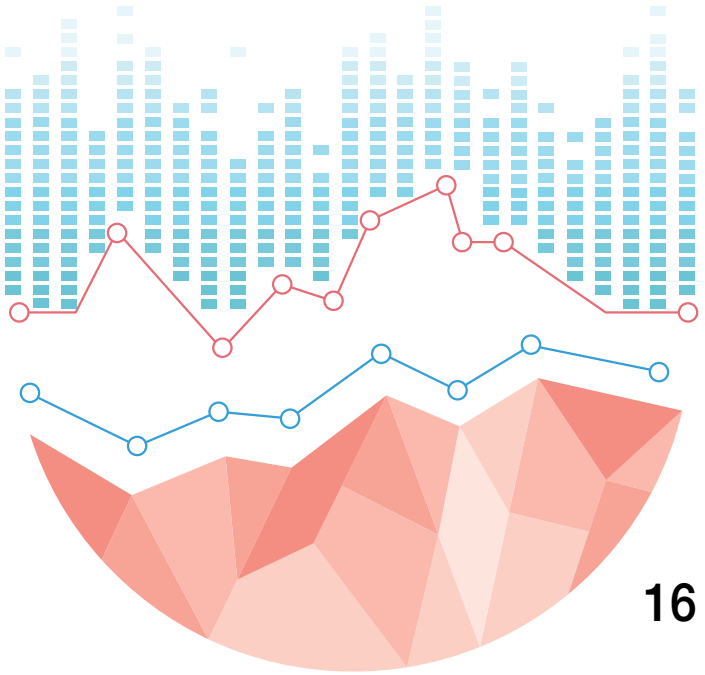

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A Note from the Editor

WHAT IS THE VALUE of content? The value of technical communication? The value of the communicator? If you've ever had this discussion with anyone—a colleague, someone from another job function, a manager or executive, a potential client—you know that it's often a charged conversation. These questions cut to the bone of who we are—they are asking, "What is *my* value?" They're getting personal.

We can't afford to shy away from this conversation, and we can't afford to treat it as something "out there" that someone else is going to deal with. It's not out there—it's inside each and every one of us. We need to have this conversation, and we need to be spreading the word about the value we bring to our clients, our employers, and *their* customers and clients.

Hence this issue's theme: "Measuring the Value of Content." If we don't convey value in the conversation around our work, if the people who employ or engage us don't understand what we do, we'll soon be out of work. If we can objectively demonstrate and communicate that the content we create has business value, we are more than halfway home to demonstrating that we, the communicators, have value as well.

In this issue, our very own "Metrics" columnist, Mark Lewis, is guest editing. He brings a wealth of insight to this topic and provides us with a survey of perspectives on the value of content. When he's not writing columns or guest-editing for *Intercom*, Mark is a Content Strategist and DITA Educator at Quark, and he manages a LinkedIn group called DITA Metrics.

Thank you to Mark for editing this informative issue, and to Melissa Rach, Alan Porter, Scott Abel, Jenifer Schlotfeldt, and Courtney Bittner for sharing their insights about content value with *Intercom* readers.

As always, we've also got some great columns for you in this issue:

- Scott Abel is back with an interview with Cruce Saunders, Founder and Principal of [A] and change agent extraordinaire.
- Michelle Corbin challenges all of us to consider technical editors as the arbiters of quality.
- Russell Willerton presents a few thought-provoking ethics cases from Ryan Bisel's *Organizational Moral Learning: A Communication Approach.*

Finally, don't forget to check out the Society Pages for information on STC's 2019 membership categories and the submission deadlines for STC's honors and awards.

While you're reading, I invite you to have a juicy conversation about some of these topics and issues with a colleague—or many! I would love to hear what you think of the issue, and I'm sure Mark would, as well.

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A Note from the Guest Editor

WHEN ANDREA AMES asked me to guest edit this issue of *Intercom* with a theme of "Measuring The Value of Content," I thought, "Okay, I'm the content metrics guy, that makes sense." My initial research revolved around the value of technical writing and of technical writers. Proving the value of technical writers has been a hot topic for decades, and still is. This made me ask, "Why are we still writing about this? Didn't we answer this question already?" Apparently, we haven't answered it to everyone's satisfaction, because the responses continue—even recently.

In early 2018, this question seemed to bother Tom Johnson, who dedicated a six-part blog series to it. Tom's research and writing convinced me that our focus should be on the question of "the value of content" rather than the classic "value proposition of technical communication," about which so many articles have been written.

Has anyone written on the value of content before? Melissa Rach of Dialog Studios and coauthor of *Content Strategy for the Web* wrote some of the earliest and best blogs on the value of content in 2009 and 2011. She has been one of the few to discuss *calculating* content's value. It's been a few years, however, since the blogs and the presentation, so I thought that her thinking on the topic might have evolved based on new projects and experiences. Melissa delivered version 2.0 of this topic, and it is exponentially more valuable than the first.

Who else has written on the topic? The Content Marketing Institute has many articles related to the value of marketing content, so I didn't ask them to write anything new. I wanted to make sure you know of this resource, however, and I strongly encourage you to review those articles. One of my favorites is on measurement.

Alan Porter, author of *The Content Pool*, offers a modern perspective on the "cost-center versus profit-center" topic. He provides an organized and thoughtful discussion on several business models to help you decide which one is right for you. This article is complementary to Melissa Rach's topic, and a great segue to a discussion on sales enablement.

In the world of sales, *sales enablement* is a hot topic. In our industry, it is not. Searching STC's website I found only two articles that mention sales enablement, but no definition or in-depth discussion. After researching this topic myself, I get it. This is important and should be a hot topic. I discussed this with Scott Abel, The Content Wrangler, and he agreed. I don't want to steal any of his thunder, so I'll just say that you will finish his article with an understanding of sales enablement and of its opportunities. This is a hot, leading edge topic.

Last is a complementary and timely case study on analytics by Jenifer Schlotfeldt and Courtney Bittner, content strategists at IBM. The article showcases their content analytics toolbox, which is a collection of content strategy tools teams can use to measure their content success and make content strategy decisions. The discussion on customer feedback personally resonated with me.

There you have it. Fresh perspectives on the value of technical, marketing, and sales content and knowledge, with a splash of tools and measuring. Check it out.

—Mark Lewis
hyperwriters@hotmail.com

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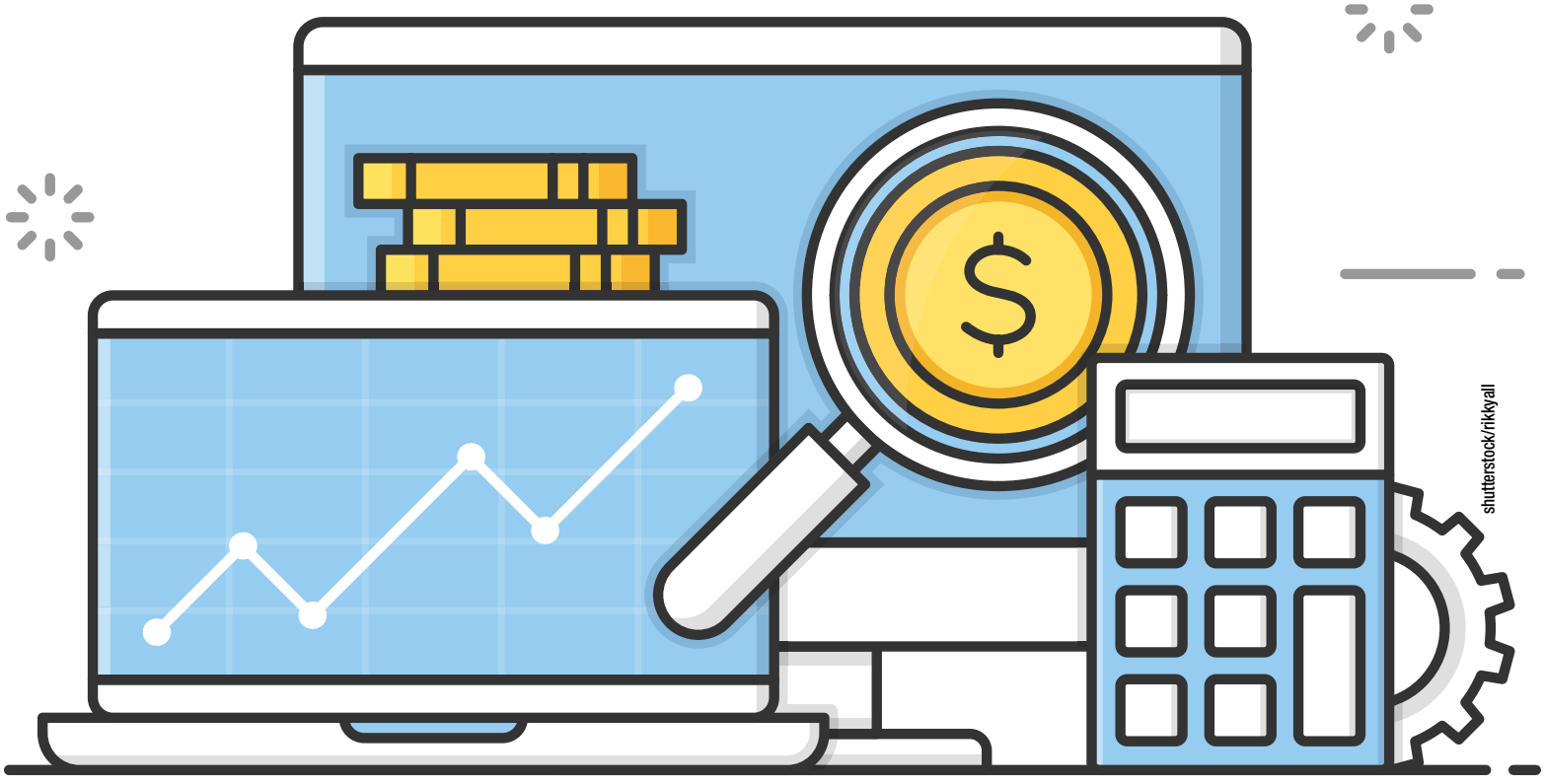
Making Content Count



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By MELISSA RACH

THE "KNOWLEDGE ECONOMY" started in the 1950s. The "information age" began somewhere in the 1960s or 1970s (depending on who you ask). Basically, we've known for 50+ years that information—and the content used to communicate it—is critical to business. Funny, then, that the question "What's the value of content?" is still met with blank stares.

Here's the thing: you can measure the value of content. It's not even that hard to calculate. It does, however, require that you challenge 250-year-old, foundational economic theories; confront deeply entrenched beliefs about value and measurement; and face fears of inadequacy. No big deal, right? Now you know why people don't do it.

Don't worry. It's not as bad as it sounds, and it's worth the effort. What's more, as an information professional, you're exactly the right person in your organization to do it.

What You Need to Know Before You Get Started

Most people in content careers don't consider themselves experts in economics (or even math). The good thing is you don't have to be an economics professor or a math genius to measure the value of content. In fact, it's probably more important that you understand—and accept—the following four concepts.

1. There's only one reason to calculate content value.

Few people go through the trouble of calculating the value of content just for sport. We do it because we want something. As content professionals, we're often asking for project funding, a pay raise, or increased institutional respect for our work. People throughout an organization want to use content values to garner support from investors, attract prospective partners, build customer loyalty, etc.

It boils down to this: the only reason we need to know the value of content is to influence decisions. Calculating content value isn't about getting to an exact number—it's about providing enough information to help stakeholders make a confident decision.

2. This is really about storytelling.

The first—and most important—steps in calculating content value are figuring out what the decision is, who is making it, and what factors are important in making the decision. Once we answer these basic questions and do some research, we can supply numerical information that specifically addresses the decision maker's concerns and interests.

Does the process sound familiar? It should. It's the same process we use to generate persuasive, user-friendly content every day. Numbers are just a different kind of content. Estimating content value is about telling a compelling story.

We use numbers to tell stories in our daily lives all the time. -20°F/-28°C sends a shiver down your spine. 90 years old is an intriguing achievement. When we tell a content "value story," the numbers we provide give decision makers a frame of reference—a way to compare one project to another and quickly understand why content is important.

3. Content is an "intangible asset," and that's okay.

Some people think content can't have value because it's not a "tangible asset." Like the name suggests, tangible assets are things you can touch. In the 1770s, when philosopher Adam Smith laid out the foundations of modern economic theory, the economy was focused on the exchange of tangible, material goods (e.g., muskets, barrels of tea, itchy powdered wigs). Accounting is still based on tangible assets today. Like their historical counterparts, modern tangible business assets—like buildings, pencils, or printers—can be easily valued, bought, and sold. They add up nicely on a financial report. It doesn't matter who is using them or if they're used at all. They have value just because they exist.

As you might guess, "intangible assets" are things you can't touch. Content is almost always an intangible (unless it's packaged as something tangible, like a book). Being an intangible isn't unique. Other important intangibles include proprietary processes, software, customer lists, patents, and brands.

Intangibles are the bane of accountants' existence. They're the key to the knowledge economy, but they don't fit nicely on an accounting balance sheet. Unlike tangibles, which have inherent value, intangibles only become valuable when they provide benefits to the organization or its customers. It takes creativity and context to assign value to intangibles. Lots of organizations don't even try. Bill Gates once said, "[Microsoft's] primary assets, which are our software and our software development skills, do not show up on the balance sheet at all."

The impact of intangibles can be huge. A few years ago, Google was valued by the market at roughly $355 billion. Google's balance sheet only showed $96 million in total (tangible) assets—the other $259 billion was intangibles.

4. Estimates and assumptions are not cheating—they're required.

As kids, we learn that number problems have one right answer and assumptions "make an ass out of 'u' and 'me'." But as the Google example above shows, people regularly make educated guesses around intangibles. Actually, all value measurements are based on educated guesses. Even tangible asset values—which seem so absolute—are usually based on "market prices" generated from somewhat subjective formulae.

Calculating the value of content requires educated assumptions and estimates, too. The key is the word "educated." Your estimates or assumptions need to be clear, researched, and reasonable, and they must make sense in the value story you're telling.

Making assumptions is often scary for content people. We take pride in "the rules"—fussing over commas and fact-checking details. We don't like to be wrong, and we certainly don't want to look unprofessional in front of decision makers. People often say, "assumptions will never fly in my organization." However, even in the most hardcore, data-driven, number-crunching organizations, finance teams make assumptions and educated estimates

every day. How do you think they came up with your salary? Or the financial projections for next year? They defined a decision, analyzed some data, compared some stuff, and made an educated guess.

So, repeat after me: educated assumptions and estimates are normal and necessary.

The Formula for Measuring Content

Lots of people ask, "What's the formula for estimating content value?" Luckily, there's an easy answer to that: **Value = Benefits – Costs.** (Just between us, "Value = Benefits – Costs" is the formula for finding the value of pretty much everything.)

With content, the hard questions are really:

- What constitutes "value"?
- What are the benefits?
- What are the costs?

The answers to these questions are different in every content situation, but the process for figuring them out is pretty consistent.

How to Estimate Content Value

Now that we're past the hard stuff, we're ready to get into the nitty-gritty of how to measure content value and successfully present a value story to decision makers.

Step 1: Identify the decision.

We talked about the importance of defining the decision earlier in the article. Here's where that comes into play. You need to get as specific as possible about:

- **What decision you're trying to influence** (e.g., Should the company revise technical specs for all products? Can we hire another writer?).
- **What your preferred outcome is and why** (e.g., We need a healthy budget to completely overhaul the tech specs because they're out of date and causing problems for employees and customers).
- **Who will make the decision** (e.g., The CTO is the final decision maker, but the CMO has a say).
- **What is important to the decision maker** (e.g., The CTO is new and wants quick wins, and she's worried about limited budgets and employee efficiency).

Although the decision to fund a content project might seem obvious to you, decision making isn't easy. It's about balancing an investment in content with investments in other worthy assets. The goal is not to win; it's to come to an agreement that benefits the decision maker, you, and the organization as a whole. Being able to clearly state the decision and articulate how it positively impacts the decision maker's business goals is vital to your success.

Step 2: Create a hypothesis.

When you're clear on the decision, you can create a hypothesis about the components you need to measure: value, benefits, and cost. Measurement expert Douglas Hubbard made this process easier for us by defining three ways information provides value to businesses. After you pick one of Hubbard's options (or a combination of them), determining high-level benefits and costs is fairly straightforward.

Table 1 shows Hubbard's three values with examples that illustrate content type, benefits, and costs.

Table 1. Three ways content provides value to a business.

Three ways content provides value to a business.	
1. Content reduces uncertainty about decisions that have economic consequences.	
The content is… A journal article that assures physicians that the drug is safe for patients.	*Benefit:* Increased profit as the result of the physicians' decision to prescribe the drug *Cost:* Cost to create the content
2. Content affects the behavior of others which has economic consequences	
The content is… Updated and improved tech specs for all products (replacing out-of-date specs).	*Benefits:* Cost savings due to employee efficiency using the specs; profits based on increased customer sales/satisfaction *Cost:* Cost to create and publish the content
3. Content has its own market value	
The content is… Help content that can be licensed to partners for use on their websites.	*Benefits:* Profit from the sale of the product *Cost:* Cost to create, maintain, market, and distribute the content

The examples above show what happens if company choses to create content. Sometimes it can be equally (or more) convincing to think about what happens if the content is *not* created (see Table 2).

Table 2. Content affects the behavior of others.

2. Content affects the behavior of others which has economic consequences.	
We do not replace out-of-date tech specs with updated or improved specs.	*Benefits:* Budget savings from rejecting the project; profits resulting from allocating employees to other projects *Cost:* Cost accrued from employee inefficiencies; profit loss from lost sales and longer sales cycles; cost accrued from customer service calls

Step 3: Gather data and support.

Here's where the numbers come in. You need to gather numerical data and context about the content, benefits, and costs in your hypothesis. In the tech specs update example, research questions might include those shown in Table 3.

Answers to some questions might be easy for you to find, but others will take a little work. Don't be afraid to:

- **Ask for help**: Collaborating with people—from finance to sales—makes your calculations more accurate, gives your story more depth, and gets other business functions invested in your project.

Table 3. Sample research questions.

Content	Benefits	Costs
How many products/product specs documents are there?	How much employee time could be gained by improving the specs?	What is the cost of developing a new specs template?
What percent of the specs are good/OK/bad/unusable?	How many sales do we have per product?	What will the average cost of updating specs for a product be?
How many formats/versions of the specs are required?	How would improved specs impact sales?	What are the costs for training sales and customer service on new specs?
Do we have user research on the specs?	How many customer care calls could be eliminated by improved specs?	

- **Get creative with data**: Traditional data sources—like website analytics and or sales numbers—are usually essential and expected. But often, unconventional metrics pique decision makers' interest and change their mindset. For example, in the field of bibliometrics, they count citations in journals (ranked by relevance) as a factor in calculating the value of scientific research. Let the questions in your hypothesis lead you to what's relevant in your case—even if hasn't ever been measured before.
- **Make educated assumptions**: When data can't be found, make educated, reasonable assumptions. Just make sure decision makers are clear about what the assumptions are and how you go to them.

Douglas Hubbard says when calculating value, "you probably have more data than you need, and you need less data than you think."

Step 4: Tell the story and do the calculations.

Let's use an over-simplified version of our tech specs example to see how this step works. In reality, there is usually (but not always) substantially more detail, and the numbers would be more realistic. Still, it illustrates how the numbers tell an overwhelmingly positive story. What decision maker would turn it down?

Note: Pay special attention to the estimates (assumptions). They are:

- Informed by the data
- Transparent enough that decision makers can adjust them easily
- Conservative (e.g., 250 customers is only 0.01 percent of annual customers)

The decision: Is it worth it to update tech specs for all of our projects?

Decision maker: CTO, with input from the CMO

What we know

- There are 25 products
- Average product sells for $5,000
- Average number of products sold per year: 25,000
- 2 out of 10 customer care calls are about specs
- There are 5,000 customer care calls a year (average of 20 minutes per call)
- Customer care employees' cost to the company is $150 per hour
- User research shows the specs are confusing and a barrier to purchase

What we estimate

- 500 prospects annually choose a competitor after looking at specs on the Web
- 250 of the prospects who previously left after viewing only specs would convert with better specs (a difference of approximately $1,250,000)
- Nearly $50,000 is spent on answering specs-related customer care calls
- Creating new formats for specs would cost $8,000
- Updating specs for each product (research-approvals) would cost $2,000

Estimate of cost: $58,000 (creating new formats + updating specs)

Estimate of benefit: $1,300,000 (Web conversions + customer care savings)

Estimated value of the project (updating specs for 25 products): $1,242,000 (value = benefit - cost)

Note: In this case, we don't need to know the value of each piece of content (each product spec) to tell the value story—in fact, it might be a distraction. But, if you're curious, the value of a single spec is $49,680 (value ÷ the number of products that need specs).

It's Up to You Now

Estimating content value—and using the estimate to influence decisions—can be challenging, but you are the right person in your organization for the job. Because it's really about storytelling, you have the right skills. Because you're immersed in company content and the content creation process, you have the right knowledge. And, because it means the most to you and your work, you have the responsibility to try. Go forth and calculate!

MELISSA RACH (melissa@dialogstudios.com) *is Co-Founder of Dialog Studios, a content consultancy in Minneapolis. She's also co-author of* Content Strategy for the Web *(2nd ed.). When she's not helping clients solve tough content problems, she speaks and writes about content's impact on business. Her methodologies are taught in universities around the world, and her work has been recognized in books and blogs regularly throughout her career.*

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Dollars for Docs: Documentation as a Revenue Generator

By ALAN J. PORTER | *STC Senior Member*

NOT TOO LONG ago, a friend of mine posted the following on his Twitter feed:

> ***OMG! (Company Name) actually charges for their owner's manuals! That's absurd.***

Absurd? Really? Is that the common expectation—that all the documentation associated with a product should be "free"?

Over the years I have worked at different companies that had diametrically opposed philosophies when it came to supplying documentation.

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One philosophy is that when you buy a product, you receive everything you need to run, maintain, and operate it (but not to repair it), so the company includes the cost of producing the documentation in their product pricing. They make their money on spare parts.

The opposing philosophy is built around a different business model. When you buy a product, you buy just the product and then pay extra for the bits and services you need, as you need them, so the company has a lower product price. They charge for their documentation (and their spare parts, too).

Let's take a look at the two approaches in more detail.

COMPANY A – Documentation Included

This is perhaps the more traditional model. A content development team writes the various manuals, help sets, etc., and publishes a complete suite of documentation. The whole suite of documentation is delivered with the product. The cost of producing the documentation is covered in the product price, and the customer perceives it as being "free."

But it often doesn't happen this way. I've been amazed at the number of times that I've done consulting work for companies that don't consider the cost of the documentation. Content development is not considered an integral part of the design and production process and is poorly funded (if at all). They don't calculate it, they don't consider it a development cost, and they don't cover it in the price of their products. Often, companies like that consider documentation to be "a necessary evil" (a phrase I have heard more than once) and an uncontrolled overhead. The result is usually poor-quality documentation. As a rule of thumb, if you buy a commodity-priced product and it includes "everything," then there is a fair chance that the manuals will be next to useless (I know this is a broad statement, and there are always exceptions to it).

COMPANY B – Documentation Sold Separately

In this scenario, the cost of producing and distributing the product documentation is well understood, accounted for, and managed. Most products in this case will ship with a small "free" subset of documentation that covers the basics of getting started and simple operation with the expectation that if customers want to know more, they must be prepared to spend money.

Think of the car enthusiast as one example—most people who want to maintain and repair their own cars will go and buy a book on how to do it. There are companies that write and sell specialist manuals for car dealers and repair shops. However, the vast majority of customers will never access the full documentation suite, so why provide it to everyone? The manufacturer can focus on producing the documentation that 80 percent of its customers want, and the other 20 percent can be covered by a recognizable revenue stream from selling the specialist manuals.

In recent years, I've also seen the emergence of a new model:

COMPANY C – Documentation as a Revenue Influencer

As with Company B, the cost of producing and distributing product documentation is generally well known, but in this instance, instead of seeing the documentation as a direct revenue stream, it is viewed as an influencer. Companies in this case will position documentation that is traditionally viewed as a post-sales asset early in the sales cycle as a marketing tool. By pulling documentation from behind firewalls and positioning it on an open website, with the right metadata around it to make it findable, prospective customers can get their questions answered quicker and earlier. This has several benefits, such as reducing the cost of sales by gaining the customer's confidence in the product, answering their questions early thus reducing the sales cycle/time to purchase, and exposing the customer to a fuller breadth of offerings. This approach also positions the company as being helpful and customer focused.

So which is the right approach? I think they all could be, but it depends on your business model. Whether you charge for documentation or use it as a sales/marketing tool is a product of many factors. But the cost of content development should always be correctly calculated and factored into product development costs. You need to recoup those costs somewhere—it's just a matter of deciding where in the product life cycle and how.

The bottom line is that no matter which approach you choose, in order to turn your documentation into a revenue stream, you need to first value it as an asset, as much as any widget on the production line. Properly calculated, managed, and produced, structured intelligent documentation content is an asset that has a potentially long life span across multiple uses, and will actually increase in value over time.

But if I had to favor one approach, I'd say go the separate charge route. It gives more flexibility for delivery, it gives the customer choice, it lowers product prices, and it turns the content development team from being an overhead cost into a profit center.

When I switched one of my content development teams from being overhead to being a profit center, it completely changed the way the role of documentation and the people who produced it were perceived.

And, despite what my friend on Twitter may think, the customers liked it, too.

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Connecting Technical Communication to Sales

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By SCOTT ABEL | *STC Associate Fellow*

IT'S A FAMILIAR REFRAIN: "My company doesn't value technical communication." Perhaps you feel the same way about the organization for which you work. If so, don't fret. You're not alone. And there's something you can do about it. One in four technical communication professionals (surveyed by The Content Wrangler in 2018) claim the company for which they work doesn't value technical communication.

Conversely, more than half of those surveyed say management "sort of" values the work they perform, but that leaders don't fully understand the many ways that technical content can be used to help organizations achieve business goals like increasing sales.

That limited view of technical communication is changing. Increasingly, sales leaders recognize that the content we produce can help ensure the satisfaction of existing customers and help turn prospects into loyal customers.

These changing views provide us with a fantastic opportunity to reposition ourselves as sales enablers. This article makes a case for connecting technical communication to sales to elevate the importance of our work. By connecting our content to sales (to attract prospects and convert them into buyers), we can demonstrate how the fruits of our labor can impact the bottom line. As a result, we become part of the revenue-generation team, increasing the value of the content we create.

As a bonus, by linking our efforts to sales, we're more likely to receive the resources needed to produce that content. Those resources could be used to streamline and modernize our content creation, management, and delivery processes and systems. Moreover, when we're sales enablers, we're less likely to be cut from the employee roster during lean times.

So, what changed?

"Today, organizations that seek to create exceptional customer experiences with content realize mapping content structures to the full-lifecycle needs of audiences offers differentiating value," says [A] Founder and Content Engineer Cruce Saunders.

Traditionally, information products created by technical communicators were considered post-sale deliverables. Deliverables such as end-user documentation (assembly, disassembly, maintenance, and repair instructions) and online help were often provided to customers only after they purchased a product or service.

However, thanks to revelations gleaned from analysis of content performance metrics and interviews with decision-makers, sales teams now realize that prospective buyers often seek out—and value highly—technical information.

While technical content is sometimes useful in business-to-consumer (B2C) selling, technical content is almost always an essential ingredient in business-to-business (B2B) transactions.

According to content strategy consultant (and *Intercom* Executive Editor) Andrea Ames, researchers at IBM (where Ames worked previously) discovered that prospective customers considered high-quality technical documentation content "important" or "very important" to their initial purchase decision.

Research from the lead management consultants at DemandGen unearthed similar findings, along with details about the types of content buyers desire. In their 2017 Content Preferences Survey Report, DemandGen found that prescriptive content is the most popular type of information sought by B2B buyers. Would-be purchasers prefer content delivered to them on-demand in mobile-optimized small chunks, personalized for their needs. And they expect us to help them discover new content that they may be unaware of—information of potential value to them based on their area of interest and where they are in the buyer's journey.

The Buyer's Journey

Modern marketers sometimes organize how they envision prospective buyers will interact with the company into something known as the buyer's journey (sometimes referred to as the customer journey). By organizing the journey into stages—awareness, evaluation, decision, and advocacy—marketers can map and deliver stage-appropriate content with precision timing to members of a particular audience segment. By dividing the buyer's journey into stages that consider the intent of the buyer, we can laser-focus our content for maximum effectiveness.

For example, during the awareness stage, prospective buyers may seek access to information contained in white papers, eBooks, tip sheets, and checklists. This content is designed to build brand recognition and to help buyers understand the purpose of the solution the sellers are offering. By recognizing that consumers who are not yet customers have specific content needs, you can design a content delivery plan that ensures the most relevant content is provided at each stage in the buyer's journey.

During the evaluation stage (sometimes called the "consideration stage"), prospects begin to home in on potential solutions to their problems. They make a short list of vendors to consider. As they consider their purchasing options, prospective customers often seek out content designed to help them compare and contrast your products and services with those of your competition. During this stage, prospects need more in-depth technical content. Technical documentation content is often necessary to help would-be buyers make a case for adding you to their short list of vendors.

The decision stage is where prospects become customers. During this stage, prospects seek additional clarification and understanding before they commit to buying. They may need precise content designed to help them substantiate their purchase decision. It is during this stage of the buyer's journey that you must communicate a clear, compelling reason for choosing your products or services over others. The content you create should describe the problems that are solved by the product, the benefits of using the product or service, and how it's better than those offered by the competition. Decision-focused content facilitates the comparison of your product to the competitors'. Technical content often plays a starring role in the final purchase decision.

Savvy marketers realize that the information needs of prospects change when they convert from prospects into paying customers. That's why there's an additional stage in the journey called the advocacy stage. It's during this phase that your organization must create content that nurtures the customer and encourages them to remain brand loyal.

In summary, technical content is no longer just post-sale content delivered to customers after they purchase. Instead, it's content designed to create advocates and evangelists. By collaborating with sales and marketing (and other departments like training, public relations, and human relations), organizations can build a repeatable, systematic approach to providing the right content to the right audience at each stage of the buyer's journey.

What the Research Shows

In today's time-crunched business world, prospective customers seek authoritative, trustworthy content that guides them, step-by-step, toward success. They need prescriptive content that spells out what they must do to

achieve their goals, instead of traditional technical communication content that is often limited to documenting how something works.

"B2B purchasers of products and services find technical communication content of value when it helps them make decisions about why, what, or how to commit to change," says Content Marketing and Customer Experience Expert Robert Rose of That Content Advisory.

"As organizations focus their efforts on creating extraordinary content experiences, they soon realize that they serve multiple audiences. When a company aims to serve more than one audience type (prospective customers versus existing customers)," Rose says, "they start to see the need to more deeply understand the content needs of those they hope to convert."

Collaborating with sales means deeply understanding the needs of buyers. As content marketing maven Michael Brenner points out, to serve our audiences, we must understand "who they are, what they are trying to accomplish, what goals drive their behavior, how they think, how they buy, and why they make buying decisions."

Salesforce CEO Marc Benioff is said to have introduced the idea that messaging alignment (speaking with one voice) across all channels provides organizations with revenue growth. Benioff's thinking led to the emerging discipline known as "sales enablement." According to Benioff, sales enablement empowers all stakeholders involved in customer-facing communication to have richer conversations with curious prospects and existing customers alike. The sales enablement discipline focuses on enabling sales representatives by providing them with the tools and information needed to sell.

While equipping sales teams with the content they need to educate prospects and convert them into buyers makes great business sense, technical communication professionals can help the organizations for which they work create shorter, interactive content that educates rather than sells.

It makes sense that mapping content to audience segments helps organizations deliver the best experiences possible. It's challenging work that involves understanding each audience and their unique needs during various stages in their buyer journey. Mapping content requires classification and categorization, which means you'll need to have a metadata strategy (think taxonomy) that not only describes what the content is, but for whom it is designed, and at what stage of the buyer's journey is it most likely to be needed.

According to search engine optimization expert Derek Edmond, writing in *Search Engine Land* blog (*www.searchengineland.com*), the technical content types that provide the most impact include: how-to or explainer content (including video), competitive product/service comparisons, evaluation guidelines, customer service and support content, price comparisons, use cases, documentation sets, help files, and implementation plans. Comparisons help buyers make decisions.

Demonstrating Our Value Creates Opportunities

It's clear that a content strategy that includes technical content can facilitate sales. That makes information products created by technical communicators some of the most valuable content an organization can provide to prospects.

By mapping content types to the stages of the buyer's journey, you can improve your search presence and make your content easier to locate. By focusing on the creation of fresh, new content of value to various audience segments, your organization will achieve higher SEO rankings. Updating legacy technical content and revamping it for sales purposes also improves search performance, especially when intent metadata is used to categorize and deliver the right content to those who need it.

"The challenge is getting customer conversations across devices, channels, and sessions right. While there are many pitfalls to avoid, the benefits of making technical communication content available to those who need it, when, where, and how they want it, not only helps companies delight existing customers after the sale, but that same 'post-sales' content is now intentionally being used before the first sale to convert prospects into paying customers," Cruce Saunders adds.

Technical communication professionals have been at the forefront of advanced information development management efforts for the past two decades. The field of technical documentation is responsible for the creation of specialized authoring, management, and delivery tools and methods designed to connect the right content to the right consumers when, where, and how they need it.

The tools in the advanced techcomm toolbox—things like single source multichannel publishing and intelligent XML content—are both examples of innovations advanced by the industry that could be adapted to help the organizations for which you work to better serve prospects and customers alike. By doing so, we can help our organizations differentiate themselves from the competition and make sales, while also increasing the utility of the content we create and simultaneously showcasing the value technical communication content provides.

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*The Content Wrangler (*www.thecontentwrangler.com*) exists to help content-heavy organizations adopt the tools, technologies, and techniques they need to connect content to customers.*

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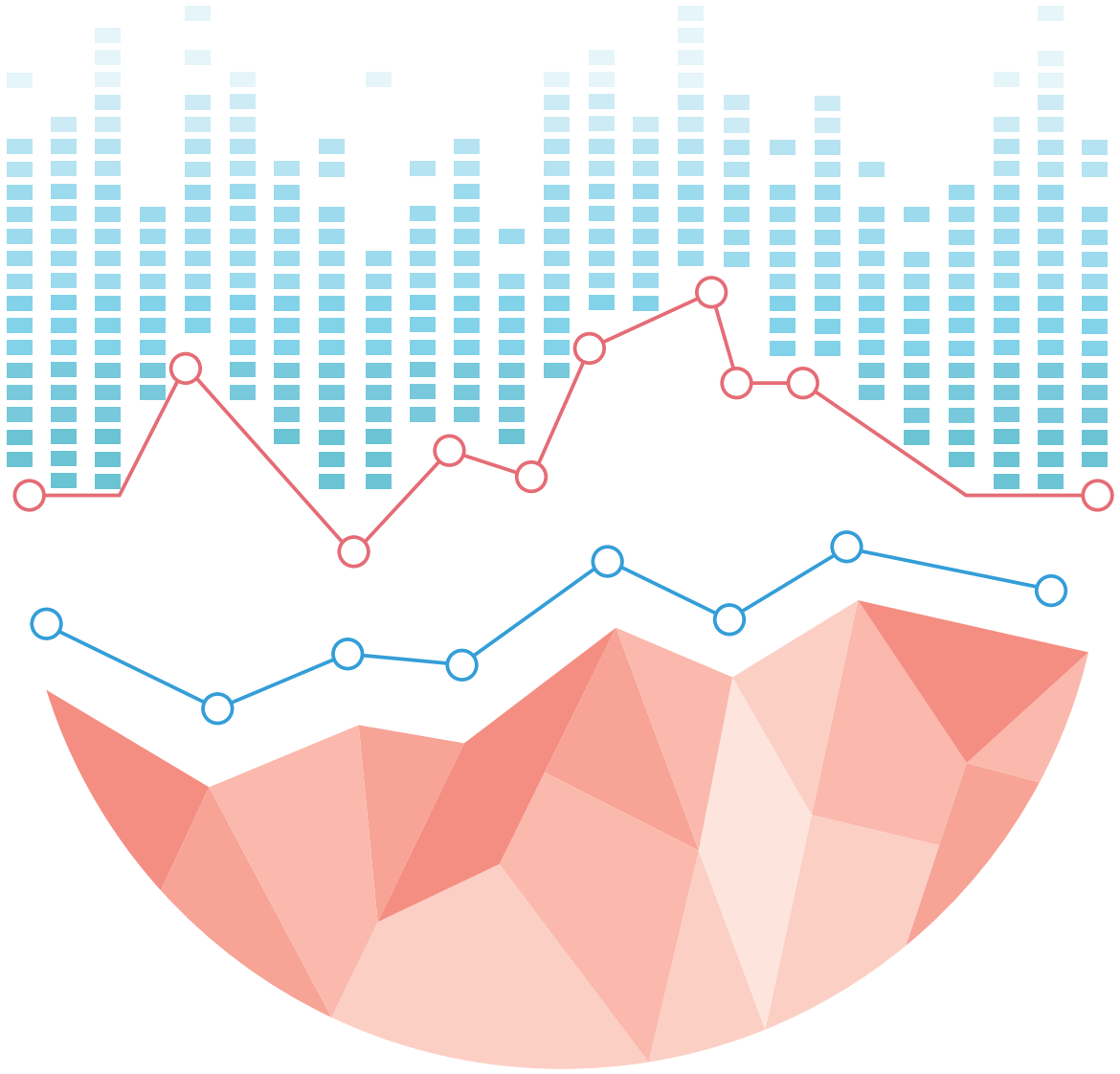
How Can You Leverage Data to Know You Have Effective Content?



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By JENIFER SCHLOTFELDT and COURTNEY BITTNER

HOW MANY TIMES have you received the following feedback: "The documentation could be improved" or "Some additional documentation would have helped"? Without specificity, it makes it difficult to know what content improvements you should address. This is where data can help you make an informed decision on how to prioritize the creation of new content and the updating of existing content, or maybe even what content you can archive or retire.

We've also started to see a big trend in the software industry leveraging Net Promoter Score (NPS) to know how your product is stacking up. NPS is calculated based on responses to a single question: How likely is it that you would recommend our company/product/service to a friend or colleague? In addition to their response, users can also leave comments. But now, those comments are also tied to a rating that your customer is leaving for your product. So, what do you do when your executive comes to you and says that your documentation team needs to contribute to raising your product's NPS score?

Whether it is addressing vague comments or just needing to improve the overall customer experience with your content, data is essential in identifying where to spend your time and resources. But what data do you use and how do you get access to that data?

To help our content teams in the IBM Cloud space answer those questions, we recently rolled out a content analytics toolbox that includes a variety of tools that our writers can use to identify what content to work on and how to measure content improvements. We use results from each of the tools in our content analytics toolbox as additional data points for making content design decisions.

So, what's in our toolbox?

Content Audits

You can use content audits to identify all the content assets that are available (or missing) for your offering. Content audits should help ensure that you have the right content published. They can quickly indicate if you have content dead ends, content gaps, or even duplication.

While you can do audits that are focused on a specific deliverable, you should collaborate with your pre- and post-sales content creators to understand the breadth and depth of the content that's available to users. Audits can help the various contributing content teams validate that there are no broken or disjointed content journeys. What exactly is an effective content journey? We define it as enabling users to learn and succeed in accomplishing their goals by delivering the right content in the right place for the right experience. Because different teams might be creating the content for each phase of the user journey, you can use audits to help identify where the flow is broken.

Another type of audit you can do is competitive evaluations. Comparing your content with your competitors' can help you with determining where you stack up in your publishing tool features, the breadth of content available, or even if you're missing content.

User Comments

This might seem like a no-brainer, but user comments are a gold mine when trying to understand if your content is effective. Content teams tend to address broken or missing content comments as quickly as possible and get back to creating new content. But finding trends in the comments can help you identify which areas to prioritize. For example, if users are leaving comments about areas that are more technical, you might need to provide additional concept topics about those areas.

Do...

- Categorize feedback so you can identify trends. For example, are you seeing a lot of comments about a specific topic, asking for a specific content format, or maybe that translation quality isn't very good?
- Ask users for clarification (if you have a way to contact them).
- Notify users when content is fixed and include a link to fixed content.
- Leverage data collected to get some insight on the users leaving comments. For example, which browsers or OSes are being used, or maybe even the geographic location where comments are being added.

Figure 1. The "Dos" of User Feedback.

You can also identify trends to help inform you in which formats the content should be created. For example, in the last quarter, we saw consistent comments from users asking about videos, tutorials, and API docs. As you review user comments, you can categorize them to identify areas to focus on, format needed, and so on. When you see a trend or many comments grouped around the same topic or theme, it can help you in understanding what the content team should focus on in that area.

Besides the actual content of a comment, there are other metadata that can be valuable, such as:

- The country or region of the author of the comment.
- The device type used by the author of the comment.

Content Test Cases

Automated test cases can also be a good tool to get more data on your content quality. Just as software development teams build and run test cases to determine code quality, we should be running quality test cases on our content to ensure we are delivering good quality content.

A lot of content measurement tends to be subjective, but there is some content quality checking that you can do in an automated way. We've scripted tests such as checking the last updated date, if you translated the content, the

number of open customer feedback issues, average style and grammar score, and confirming that content passes accessibility testing.

Reporting the results on a dashboard enables teams to quickly see which content passed or failed testing. In the dashboard that we created, we've set thresholds and assigned colors to indicate if that test is passing (green), should be looked at (yellow), or is failing (red). The color scheme provides an at-a-glance view of where their content stands.

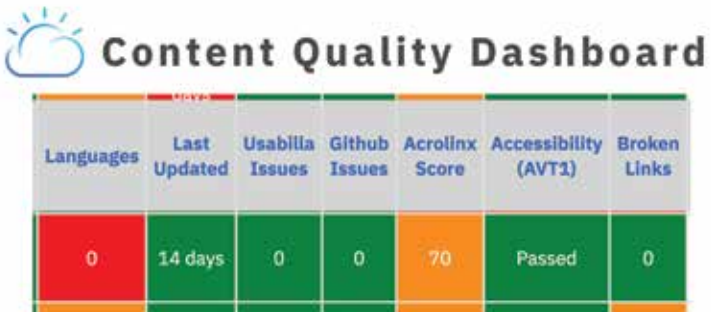

Figure 2. Example of a content quality dashboard from IBM Cloud.

A public dashboard is also a driver for teams to be "green." It enables not just content teams, but the entire product team for the content set, to be aware of content quality.

If you are building your content in an automated pipeline, leverage that same build framework to run automated test cases daily. This is an efficient way to report on the content quality of hundreds of content sets in large collections.

Machine Data

If you use tools for real-time event streaming and tracking of user actions in your software product, you can leverage these tools for getting insight into your content. These tools give you the capability to learn even more about how customers are using your content.

Some typical event streaming or user actions you might leverage for content are page views, search phrases, referring pages, or even total visitors to your doc site. But you shouldn't take the numbers at face value. You should try to understand the why of the data. You might ask yourself if the page views are high because the content is helpful, is wrong, or perhaps the user interface (UI) that the page describes is not easy to use. Knowing the why helps to determine the right content strategy direction to take, and can give you more in-depth insight.

Combining Content Use Analytics with Product Use Analytics

We also like to show that the content is successful by asking teams to identify an overall goal or job to be done for procedural topics. For example, the goal or job to be done for a database service's "getting started" tutorial might be creating a table and adding data to it. If you can build a funnel that follows a page view with doing the job in the product within a close time frame, you can demonstrate that your topic is not only getting viewed a lot but it is successfully enabling your customer to complete the task.

If you're not sure if the topic as a whole is successful, you can set milestones for key steps in your tutorial and map those to actions in the UI. Doing so can help you determine if and when a user is struggling to complete a step in the procedure. It might be because they just can't complete the action successfully in the UI, or it might indicate that you have incorrectly documented how to complete the action.

Content Experience Scorecard

The content experience scorecard is a heuristic tool that was created in IBM to measure the effectiveness of our users' experience with technical content. To accurately measure content effectiveness, the first step is to establish baseline metrics. With a baseline established, you can measure improvements in content effectiveness. The content experience scorecard offers a way to demonstrate the value and impact of content on the success of your users and your business objectives.

We've tailored the original heuristic tool for the IBM Cloud space by defining specific use cases for content teams to evaluate: getting started and adding their offering to a solution. Because we follow a continuous delivery model, we needed to define the use cases for teams so they can conduct the evaluation and apply the resulting recommendations for improvements within two two-week sprints. We also updated some of the scoring criteria to include cloud-specific objectives. For example, because the UI can change frequently, we can use the scorecard to score the relevancy and accuracy of content and evaluate if the content is in sync with the product UI.

In addition to making the scorecard available for all contributing content teams, we also leverage it in our team. Most recently, we used it to evaluate a single, complex feature that was added to our product.

First, we analyzed the as-is content experience to establish a baseline to drive measurable quality improvements. We synthesized our findings to help pinpoint and prioritize our focus areas. To do this, we held a series of interviews with our subject matter experts across the IBM Cloud space. These experts included marketing, management, design, development, support, and more. We asked them two simple questions:

- Where do we have issues with sales and adoption?
- Where do we have issues with product consumability (use of product through entire lifecycle)?

We then summarized our findings in a SWOT report, where SWOT stands for strengths, weaknesses, opportunities, and threats. After receiving stakeholder buy-in on which areas of the content experience can help resolve the issues referred to by the previous two questions, we walked

through specific use cases that map to those areas and scored the content experience of each use case. The scoring criteria is grouped by the following user-focused objectives:

- The content is high value.
- The content is easy to find.
- The content experience enables quick, successful goal accomplishment.
- The content experience meets user expectations for consistency and branding.

After we evaluated the use cases, we created a report that summarized the results of the scorecard evaluations and our recommendations for improvements. More specifically, our summary included an overview of the scoring for each use case, the top areas to address, and any minor items to address. This provided prioritization of future content efforts.

We concluded the evaluation process by working with our content team to plan the execution of our recommendations. Based on the planning session, the team created work items to complete during the next sprint. After they completed the content changes, we conducted a follow-up evaluation to re-score the use cases. Not only were we able to make changes that had positive customer experience impact, we were also able to measure that improvement.

Some of the positive outcomes we've observed by using the content experience scorecard include being able to make an informed decision when prioritizing content requirements. We've also seen tighter collaboration across content, marketing, design, development, and support teams. And we've found that the content experience scorecard helps illustrate the value and impact of content to individuals outside the content teams.

More and more, we're seeing data that indicates we need increased focus on improving our customers' experience with technical content. But how do you know what to focus on and where to target first? A good content strategy takes several data points into consideration. Leveraging the breadth of data that you have available to you is the key to ensuring you have the right, effective content.

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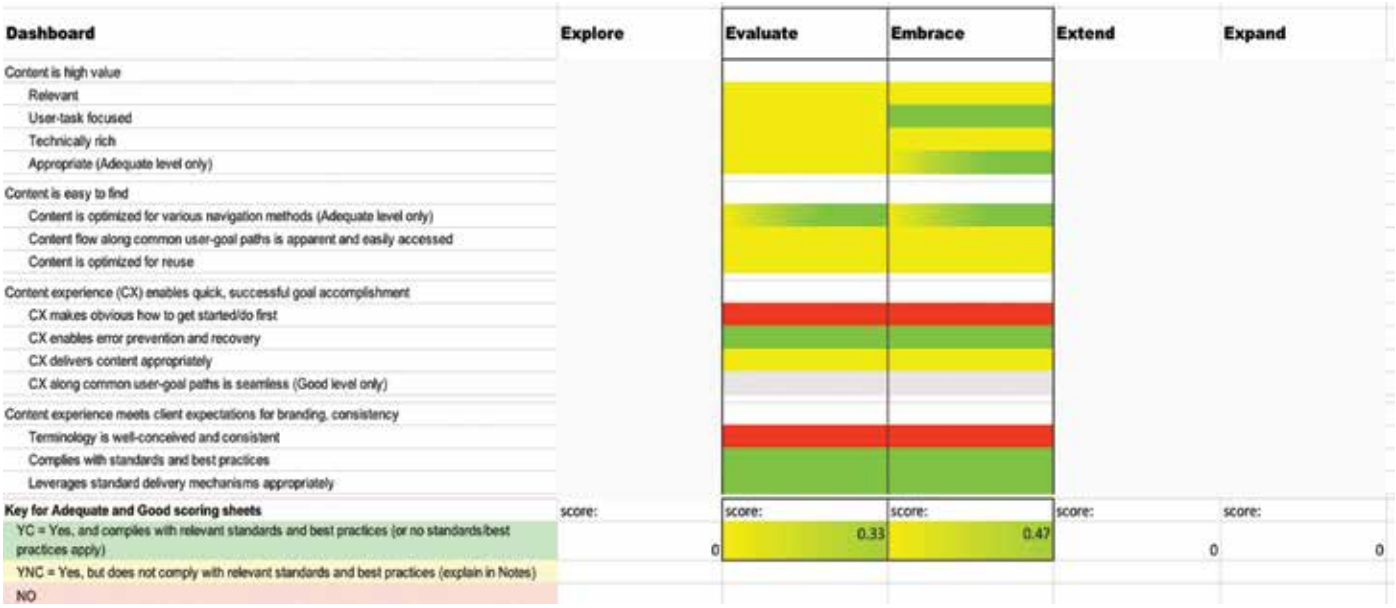
Dashboard
Explore
Evaluate
Embrace
Extend
Expand
Content is high value
Relevant
User-task focused
Technically rich
Appropriate (Adequate level only)
Content is easy to find
Content is optimized for various navigation methods (Adequate level only)
Content flow along common user-goal paths is apparent and easily accessed
Content is optimized for reuse
Content experience (CX) enables quick, successful goal accomplishment
CX makes obvious how to get started/do first
CX enables error prevention and recovery
CX delivers content appropriately
CX along common user-goal paths is seamless (Good level only)
Content experience meets client expectations for branding, consistency
Terminology is well-conceived and consistent
Complies with standards and best practices
Leverages standard delivery mechanisms appropriately
Key for Adequate and Good scoring sheets
score:
score:
0.33
score:
0.47
score:
0
score:
0
YC = Yes, and complies with relevant standards and best practices (or no standards/best practices apply)
YNC = Yes, but does not comply with relevant standards and best practices (explain in Notes)
NO

Figure 3: Example of a content experience scorecard dashboard from IBM Cloud.

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Everything You Wanted to Know about Earning STC Certification but Were Afraid to Ask

BY KIMI SUGENO | *STC Member*

THINKING ABOUT PURSUING CPTC certification, but not sure what to expect? When I first started attending STC events a few years ago, several of us were new to the field and discussed getting certified. A few of us registered for the exam, and then spent the following months discussing what we had (and had not!) done to prepare.

As an aid to others considering certification, here are some notes from my experience.

Register for the exam. Your registration is good for a year, so you don't have to wait to register until you're ready to take the exam. The year goes fast! If you're a procrastinator like me, work back from the expiration date, making sure you leave time to read and study the 600-page book.

Buy/rent the book. It's worth it. The information is detailed and specific to the exam. It's not necessarily common sense or information you would pick up in daily work.

Take the practice exam. Why?

- *It's humbling.* I've been in the publishing field for many years, so I figured it shouldn't be too difficult. Did I pass the first time I tried the practice exam? No.
- *It helps guide your reading/study.* Seeing the types of questions on the practice exam will give you a sense of the breadth and depth of the coverage. In my experience, it's all important, and anything in the book might be on the exam.
- *It familiarizes you with the test environment.* The online exam is pretty intuitive, but why waste time learning the site on test day?

Review the Study Guide. Doing this before you dive into the book will help you focus on key items to digest. I must admit, though, that I paid less attention to the syllabus and more to the mechanics of the exam described in the later sections of the Study Guide.

Read the book. It seems repetitive, but there are differences across the various communication types. Learn the basics, then look for the differences. Read the *entire* book. Did I mention exam fodder could come from anywhere in the book? There's a section on proofreading marks at the end that I barely glanced at. I've been in publishing my entire career, but there was a proofreading mark on the exam I had never seen before.

Study, study, study. I found the general concepts fairly easy to learn, but since there are subtle differences between the types of communication, I spent a good amount of time studying. For me, it was time well spent, since many of the exam questions targeted those subtle differences.

Schedule your exam. This part is easy—there are proctors available almost 24/7 (I think they took a break on Christmas). Before test day, test your system to make sure your camera and microphone work well. Have spare batteries on hand for anything wireless.

On test day, access the proctor system. Mentally prepare for some set-up time before you actually start the exam. As the exam time approached, I did some last-minute cramming so the details would be fresh. After logging in and waiting a few minutes to connect with a proctor, we went through a number of set-up steps including showing my ID and panning my camera to show my monitor, desk, floor, and walls. Because I did not expect this to take so long, it was a little distracting.

Take the exam. Watch the time; it went much faster for me than when I took the practice exam**.** Answer the questions you know and then loop back to work on the ones that will take more time. After the exam, your pass/fail status will be displayed on the screen. Take a screen shot, since you won't get another notification until your results are confirmed.

Await confirmed results. You should receive your confirmed results via email in about two working days. It may take a few more days for your certificate to be available for download. And finally, it took a few weeks for the certificant list on the STC website to be updated.

What's next. If you passed, congratulations! Don't forget about those CEU requirements to keep your certification current. You can get points for a number of different activities, including writing articles for *Intercom*.

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An Interview with Cruce Saunders

BY SCOTT ABEL | *STC Associate Fellow*

ORCHESTRATING AND CHOREOGRAPHING the design, acquisition, management, translation, and delivery of content seamlessly across networks, platforms, and devices is the turf of content engineers. In this Meet the Change Agents interview, Scott Abel talks with Cruce Saunders about content engineering, content intelligence, and the role of technical communication professionals in ensuring that content achieves its business goals.

Scott: Cruce, thanks for taking time to speak with me about the emerging discipline of content engineering and its importance to technical communication project success.

Before we dive into questions about content engineering, tell our readers a little about yourself, your company, and what you do for the customers you serve.

Cruce: Thanks, Scott. I am a Content Engineer and the Founder and Principal of [A], at *simplea.com*. All of us involved with technical and marketing communications know that enterprise publishers are buried in a soup of existing content systems, structures, and standards that don't connect and communicate, especially when confronted with more and more publishing modes, variants, and channels. [A] was founded to address enterprise content scale issues using an architectural and engineering patterns approach. So, we've created [A] as what we call the Content Intelligence Service. Our goal is to help smart, content-rich organizations get smarter about content production and delivery. We are privileged to work with some of the largest publishers and most complex content sets on the planet, under the hood with the people, processes, and architecture that power modern content experiences.

Scott: Self-described content philosopher Joe Gollner defines content engineering in *The Language of Content Strategy* (2014, XML Press) as: "The application of engineering discipline to the design, acquisition, management, delivery, and use of content and the technologies deployed to support the full content lifecycle."

For many technical communication professionals, writing is at the core of the work they perform. Why is it important that a technical communicator understand the role of the content engineer?

Cruce: Technical communicators are structuralists, and have been for decades. That's huge! Who else really, deeply understands content structure? Who else really gets the relationship between words, visual assets, and technology? Some in IT understand structure, but from a data modeling perspective. Some in marketing, but from a strategic and UX perspective. Lots of silos have part of the puzzle. But where else in the enterprise does there exist trained professionals, who

understand subject matter, content structure, metadata, and topic relationships? Very, very few groups outside of tech comm have the right DNA to influence content structure, annotation, and enrichment. Other groups CAN get there, but it takes extensive new training. Tech comm is ahead of the game.

Technology and content together are the keys to omnichannel publishing.

Tech comm should embrace its leadership position and early adoption of structural norms to facilitate the transit of content. And we need to think bigger. It's too easy to get trapped in a deliverables mindset.

I am a huge admirer of Joe Gollner. He has been leading toward structural and semantic content normalization since way before engineering content became so clearly essential to the future. His prescience benefits the whole industry. It's a great honor to get to work with him in collaboration at [A].

Enterprise content warriors and innovators such as Ann Rockley, Sarah O'Keefe, Rob Hanna, and others have been leading successful content transformation and enrichment projects for years, and teaching others. As an industry, we are indebted to those leaders for shaping messy enterprise content ecosystems toward order.

Tech comm people from all walks, especially writers, can and should give themselves the charter and permission to start leading more of the conversation around content portability, reuse, and reshaping for use across multiple customer experiences. That doesn't mean just DITA and internal XML standards, although that's a good place to start.

Scott: You've been a proponent of intelligent content and have extolled its business value in articles and conference presentations. As you know, this isn't a new idea. Many large multinational companies have implemented changes in their content creation, management, translation, and delivery processes to enable capabilities they could not enjoy without making such changes.

Technical communicators are structuralists, and have been for decades. That's huge! Who else really, deeply understands content structure?

Despite the maturity of the content strategy and engineering disciplines, why do you think more organizations have yet to adopt intelligent content?

Cruce: Content publishing is driven by large, distributed teams of contributors hidden in every nook and cranny of the enterprise: every regional geography, every product team, every internal- and external-facing group produces and consumes content. So it's just seemingly overwhelming. And who actually even owns content? Everyone, and no one.

Unfortunately, today, the challenge of managing content strategically is falling to underfunded marketing and tech comm groups, and sometimes to knowledge management or training departments, who are ill-equipped with the authority or budget to enact change across the bigger picture of customer experience. Rarely does anyone have the budget to actually improve systems. They have the budget to make donuts in a given quarter or year. There's budget to ship content, but not to pay attention to the ship itself.

But as everyone who has been fighting for content's rightful place knows, it comes down to education, budget allocations, and organizational structures to support intelligent content enrichment programs.

Mid-level and senior functional leaders simply do the best they can with the resources they have to improve publishing maturity. Real change won't happen until content intelligence initiatives are seen as strategically valuable by the C-suite. But there's anecdotal evidence that's starting to happen. In the last year, [A] has been approached by several individuals in the office of, or reporting directly to, a CEO or CMO. Strangely, not a CIO yet, although people in their organizations are almost always involved. Executives are starting to understand that massive strategic market outcomes depend on how we treat this most-valuable and most-misunderstood asset: content.

Scott: If a technical communication team decides to consider creating intelligent content, what should their first step be?

Cruce: Moving toward content intelligence requires an iterative, experimental process. First comes education and awareness. We need to agree on the problem among a cross-functional group of content stakeholders. And agree on the opportunities. Where are things breaking now? How can we start to quantify our technical debt around content? Who is spending what amount of effort on copy-and-paste and other forms of content transformation? What publishing scenarios are not possible with the status quo? What would be possible if we did not have so much inherent friction in moving content sets around within a subject domain like marketing, support, or training? What customer experiences and marketing scenarios become

In the digital age, change happens quickly. This column features interviews with the movers and shakers—the folks behind new ideas, standards, methods, products, and amazing technologies that are changing the way we live and interact in our modern world. Got questions, suggestions, or feedback? Email them to *scottabel@mac.com*.

possible if we can move content between domains?

After creating a shared sense of the problem, pilot projects (even paper ones) are the beginning and a necessary first step. Intelligence is like an organism that grows through cellular division and mitosis. We need to form and spread the DNA from a focus point and seed content coherence within one part of the ecosystem at a time.

Scott: To make intelligent content work to its full potential, we need to orchestrate a host of tools and technologies and choreograph the movement of our content across multiple domains, platforms, systems, and delivery channels. What role does content engineering play in the creation of successful intelligent content projects?

Cruce: First and foremost, we need to know that content intelligence is a team effort and an ongoing process. It's not a project. It's not a committee. It's not just a governance function. True cross-domain, cross-silo content portability requires a set of ongoing practices, functioning on a persistent basis. And content engineering is one of those practices.

It's important for enterprise leaders to approach content strategy and content engineering together, as a part of an integrated approach toward improving customer experiences across channels. [A] sees the practices of content strategy and content engineering, along with content operations, as the pivotal functions within a new enterprise-wide content operating model.

When addressed holistically, content assets produce ongoing economic returns in terms of customer acquisition, share of wallet, and loyalty. Content strategy by itself is not enough. Content engineering by itself is not enough. We need both the content and the distribution. We need the message and the method. We need the essential knowledge and the multimodal manifested states of that knowledge. We need strategy and engineering. So, the practice of content engineering gets included within an organization's overall planning around customer experience, content marketing, and customer support.

[A] has built a Content Intelligence Framework that describes the contributors, the shared artifacts that drive structural and semantic norms, and the architectural approach to systems alignment. It's true: there are dozens (sometimes hundreds) of systems that handle content in an enterprise. And usually lots of internal IT and external vendor developers maintaining those systems. We have to create a superset of content orchestration and management that enables content flows, so that they share structure (schema) and agree on semantics (taxonomy, vocabularies) and relationships (graph) from system to system.

Scott: For the past few years, I've been focused on helping technical communicators better understand tangentially related tools and techniques that may—if we implement them thoughtfully—provide improved customer experiences. At our 2017 Information Development World conference in Menlo Park, you spoke about chatbots and structured content. What role should chatbots play in the delivery of technical support content today, and what might we expect their role to be in the future?

Cruce: Technical support, as with all post-sales customer experiences, provides us with lots of opportunities to have our content intelligently interact with our customers to create brand value. We need to see chatbots as another entry point, or mode, of interaction with our existing topic-based content sets.

Start with "if we knew X about our customer, what could make their experience as low-effort as possible?" Or ask "How could a chatbot help our customers avoid a call, form, or email?"

Think of chatbots as another way to facilitate interactions that would normally involve more customer effort:

- Search
- Content suggestions
- Form fills
- FAQs
- Front-line service

Ultimately, chatbots help us reduce customer effort and increase interactions with our brands. Being a customer is hard. Chatbots should make the experience a little bit easier. Low-effort experiences increase repurchases, wallet share, and word of mouth.

Scott: Over the past year, we have seen widespread adoption of voice-enabled systems like the Apple HomePod, Google Home, and various incarnations of the Amazon Echo. Each of these systems requires us to prepare our content in ways that support discovery by these newfangled interfaces. What role can technical communicators play in helping their organizations make their content available and accessible to these voice-enabled chatbots?

Cruce: As you know, [A] advocates for aligning chatbots with the rest of the content ecosystem, so answers involving related content items can be brought directly back to a customer in response to a related intent. Baking conversational content strings into the CMS, and having the chatbot access those as part of a fulfillment process, is a good way to accomplish that alignment. There's a lot more to that story, and interested folks can look up the webinar (*bit.ly/buildingchatbots*) we did together last summer to see more of those details, or read more on *simplea.com*. Often, the strings we need to add to our CMS content types to get started are simply questions and answers related to a given topic, which is intuitive for writers. When posed in Q&A pairs, content items are easier for chatbots and voice interfaces to match intent with responses that make sense when spoken, so

When addressed holistically, content assets produce ongoing economic returns in terms of customer acquisition, share of wallet, and loyalty.

getting started doesn't have to be too hard. Voice assistants can consume from the same content-as-a-service architectures that support headless content consumers, such as mobile applications, kiosks, AR/VR applications, wearables, and third-party content licensees. But before the architecture and technology, or even the content structure planning, the very first step to preparing content for chatbots comes on the strategy side—knowing and writing down what our customers' intents are, so we can begin to address those intents through interactive content.

Scott: In an interview you did recently with *tcworld*, you stated that "chatbots are not the future of technical communication." What did you mean by this? And what role, if any, do you believe chatbots should play in the communication of technical and product-specific instructional content?

Cruce: Ah, yes. I'll quote from that interview and then elaborate:

"The future is omnichannel. Actually, one could make the argument that the *present* is already omnichannel, as evidenced by the proliferation of channel and function-specific authoring groups. Chatbots are just a channel. People still will want PDFs. And Web interfaces. And search results. Conversational interaction with our content already happens every day, whether we structure for a clean experience or not. We already ask Google for answers, and Google crawls our sites to find the answer. Every atomic fragment of content is a customer's potential first interaction with us. We need to structure content for conversational variants within our CMS, along with the traditional article form content. If we care about meeting customers at the channels, we need to accommodate for channel interactions at the level of content structure. We design the model, then the modes. Structure precedes presentation."

So, basically, we should not put all of our content interaction eggs in any one channel basket, including chatbots. We should put our energy into coherent, topic-based content sets working against a single Master Content Model. And that model should be represented in our systems of record and customer interactions, including chatbots.

Scott: Far too many times, organizations quickly ditch one content technique for a shiny new one without regard for the amount of time and money invested. When new technologies make themselves known, some teams gravitate away from techniques that provided substantial value in the past in hopes of making things easier, faster, better. This type of situation can often lead to some organizations throwing out all of the work they did previously in an attempt to gain value from the new approach.

When thinking about chatbots and voice-enabled devices, can we benefit from leveraging our semantically-rich, consistently structured, modular, intelligent content? Or, do we need to start all over again and adopt a totally new way of creating support content?

In other words, can we repurpose the way we create, manage, and deliver content and leverage those processes and approaches to feed answers to questions submitted by our customers through a chatbot or voice interface?

Cruce: Oh, yes! It's a sin to leak knowledge. Or bottle it up. Or recreate it lots of times. Let alone scrap it. We should honor and respect knowledge and the effort it takes to form it into content artifacts and experiences. If the knowledge exists, and it's still valid and can serve customers, let's use it. Take the time to enrich semantics and structure and reuse it. It seems like a lot of effort, but losing knowledge, underutilizing it, or recreating it is far more expensive long-term than creating the pipelines and connectors to reuse and repurpose it.

Scott: There's a little bit of confusion in the technical communication space today caused by these two terms: markup and markdown. Can you help us understand the value of markup, and how it is different from markdown?

Cruce: Markup makes machines able to understand and present content. Almost everything that gets sent from a server for a browser to parse and present contains markup. Markup is originally a term from the print world. An editor would receive raw text, then go through it to add annotations about what was to be italic, what was bold, what needed to be a title, a subhead, or a drop cap. The printers would use these "markups" when producing a final version. This became known as "marking up" text. Of course now, markup contains all forms of metadata, microdata, and other annotations for all manner of machine interpretation. XML is a form of markup too. Markup can incorporate semantic metadata and references, giving our content defined relationships. So now, instead of human editors prepping for one print publish event, machines are now parsing the markup for presentation and transformation across hundreds of device types, and extracting the text for use in countless ways by search engine and intelligent assistants. Markup is how content moves.

Markdown is a shortcut that some authoring groups use to attempt to simplify indicating presentation markup by using a limited set of tags that later get converted into structurally-valid HTML and CSS. Markdown can be considered a subset

or precursor of markup, made easier for authors who want to indicate formatting without dealing with the full, hairy specifications of various markup standards.

When a client has a markdown authoring lifecycle in place, we work with ingesting and transforming markdown to align it with richer annotation cycles later in the content lifecycle.

Scott: What content-related technologies are you most excited about and why?

Cruce: There's lots of great emerging semantic services platforms and smarter Digital Asset Management applications, Customer Experience Management platforms that get smarter by the minute, and lots of approaches to delivering content APIs … all of that is great. But I am not as interested in specific tech.

We have too many content authoring management and publishing systems trying to orchestrate a single customer experience with content that doesn't transit between systems, is redundant, or is otherwise overwhelmingly inefficient. Technical communicators are painfully aware of this, and the answer lies within the practice of content engineering.

To create this unified customer experience, we have to engineer not just the content authoring systems, but all the systems that the content touches in its lifecycle from authoring to delivery across channels. Our content must inhabit many, many representational states. The states to which our content must conform are no longer just independent of design and presentation, they are increasingly context-dependent and personalized.

So at [A], we advocate for the Master Content Model as a unifying model that gives structure to this process. That kind of abstraction layer to content, independent of tech, is what interests us the most. We can work with innovative technology once we have an orchestration layer. Once we have the sheet music and agreement on the basics of music theory, then we can make the orchestra play coherently.

Scott: Let's shift gears a bit. You run a popular podcast during which you interview thought leaders about topics related to customer experience, digital transformation, and intelligent content (among others things). How can our readers subscribe to your show?

Cruce: Listeners can find us on popular podcast services, such as iTunes or Soundcloud, under our [A] Podcast Series name: Towards a Smarter World. We also host the podcast on our website, *simplea.com*, along with a transcript and the audio file for direct download. We interview industry thought leaders and innovators in content intelligence, omnichannel publishing, machine learning, and enterprise content operations.

Scott: Many people are super excited about the opportunities to improve content creation, management, translation, and delivery with the help of machine learning systems and other forms of artificial intelligence (AI). What possibilities does artificial intelligence provide that you are most excited about and why?

Cruce: Goodness, there's a lot here, and all of it bleeding edge. We spent two days exploring this topic area in workshops recently for a client. Way too much to get into here. Let's just focus on a couple of primary areas: Machine-based annotation and enrichment of content, and Recursive Neural Network-authored content summaries. It's my current opinion that various Natural Language Processing (NLP) technologies are not truly ready to provide consistent quality entity identification, except on the largest, most normalized, and most predictable sets of content. However, it can do a pretty good job identifying 80 percent of the most relevant entities in a given set of text—albeit with a variable error rate. Therefore, we can use NLP to reduce the time it takes to define semantic relationships in our content sets—to provide entities and keywords—as long as humans are in the loop and are the final editors. So it can be seen as a sort of "intern" providing some pattern recognition, but professionals have to vet it before the content sets are updated on the live production servers. This is true for Recursive Neural Networks (RNN)—often referred to in the broader scope of Natural Language Generation or NLG—that are being trained to author content summaries. With a corpus of enough consistent content, an RNN can start to generate valid summaries or abstracts of long-form material, but human involvement is necessary for quality assurance. So think of AI today as a power-up and potential time saver but not a magic pill.

Scott: If you could leave our readers with just one thing of value, one piece of advice, as they consider what new skills to add to their toolkit to advance their careers, what advice would you give them?

Cruce: Study content structure and semantics. Build relationships outside of tech comm. Walk around, browse around. Look for patterns beyond tech support, customer service, and knowledge management. Everything relates. Study the nature of content by getting to know how it expresses itself in authoring, management, and delivery in the many settings in which it interacts. Awareness creates conversations. Conversations create connections. Connections create shared understanding. We'll move the industry forward with that shared understanding translated into actions.

Scott: Well, it appears we're out of time. I thank you for sharing your knowledge and expertise with our readers. I really appreciate all the great work you and your team do to educate members of our professional community. It's much appreciated.

We Are the (Quality) Champions

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BY MICHELLE CORBIN | *STC Fellow*

I FIRMLY BELIEVE that technical editors are the arbiters of quality. My soapbox (that I formalized in a journal article) has always been "technical editing is a quality assurance process." A complete quality assurance process involves:

1. Defining your quality goals.
2. Quantifying your quality goals so you can measure them (defining your metrics).
3. Taking action on the measurements.

Defining What Quality Means

For technical documentation, quality means adhering to a set of standards and exhibiting certain quality characteristics. Or, put another way, it is the absence of defects as defined by those standards or quality characteristics. Some documentation teams define quality as the degree to which the customer's expectations are met or surpassed, and use beta tests, usability tests, and customer surveys to gather metrics.

Technical editors can help ensure that the documentation is free from defects, meets the agreed upon standards, and exhibits the desired quality characteristics.

One of the most robust definitions of quality that I know is the nine quality characteristics that are detailed in *Developing Quality Technical Information: A Handbook for Writers and Editors*. Within each quality characteristic, there are numerous guidelines that help writers and editors deliver quality documentation. Whenever a guideline is not followed, it constitutes a potential defect.

Measuring Your Quality

To measure your quality goals, you need a way to quantify them. A standard set of metrics—a set of numbers, ratings, or rankings—will help you to apply the measurements consistently and repeatedly. You will want to take baseline

In Editing Matters, Michelle Corbin covers matters (topics) about editing that matter (are of consequence) to communicators of all kinds. Watch this space to understand more about editing and what you can do to improve the quality of your content. To suggest a topic or ask a question, contact Michelle at *michelle.l.corbin@gmail.com*.

measurements, and then repeated, periodic measurements so that you can show quality improvement over time. On the *Focused Objective* blog, one of the tips for avoiding the traps of using metrics is to avoid focusing on single-point values and instead to focus on trends and showing the bigger picture.

One of the ways that IBM has measured the quality of its documentation is by using the Editing for Quality process. We detailed this process in a *Technical Communication* article, but I'll summarize it here:

1. Completing a detailed, comprehensive (substantive) edit, and writing a quality report that lists and categorizes the issues according to the nine quality characteristics defined in *Developing Quality Technical Information*.
2. Using the quality report to assign a rating (one to five, from very satisfied to very dissatisfied) for each of the nine quality characteristics. Then, a team of editors would review and confirm these ratings.
3. Computing an overall quality score. This quality score is a formula that weighs each of the nine quality characteristics and multiplies the assigned ratings by those weights, and then converts the result to one number on a scale of 0 to 100.

This Editing for Quality process produces a metric that measures the quality of a piece of content.

In my last Editing Matters column, I talked about Acrolinx as a grammar checker, or as "content optimization software." What I did not mention was the scorecard and the quality score that it provides after running your content through its "advanced linguistic analytics engine." When you install and configure Acrolinx, you can configure the set of grammar, style, and terminology guidelines (you can essentially define what "quality" means). Acrolinx's analytics engine then uses your quality definition to identify defects and measure the quality of the content. You see scores for each category of guidelines (normalized document length divided by the normalized document length plus the number of issues for that category), and an overall score based on the average of all the individual category scores. It allows you to define an excellent score, an acceptable score, and an unacceptable score.

Taking Action on the Measurements

Regardless of how you collect the data, what matters most is what you do with it. Once you've identified the list of defects, you must work to remove as many as you can.

Personally, I love Acrolinx as a way to measure the quality of the information because I can run it on the content before I do a technical edit to get the baseline measurement, run it on the content after the writer has updated the content based on the editing comments, and immediately see quality improvement (hopefully!). Acrolinx can also serve as that final quality check before you release your information, catching any issues that crept in with iterative updates.

By watching the metrics over time and watching the trends and amount of quality improvement, you can use your metrics to help justify more resources (writers or editors) or more time, as needed.

So, why measure quality?

Really, what's the point of defining what quality means, measuring quality, and taking action on the measurements?

- To measure the value of the information and provide:
  - Improved, simplified documentation
  - Easier to use documentation
- To increase benefits:
  - Increase productivity (your own, but also your customers')
  - Increase satisfaction (your customers', but also your own)
  - Increase sales (if you're doing it right!)
- To decrease costs:
  - Decrease documentation production costs (resources, processes)
  - Decrease support costs (training, help desk, maintenance)
- To demonstrate that writers and editors have a positive effect on the quality and the value of the documentation and ultimately the end product. i

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Out of the Abstract and into Your Real Life

BY RUSSELL WILLERTON | *STC Member*

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IN A RECENT BOOK, organizational communication scholar Ryan S. Bisel examines the ways in which organizations typically train employees about ethics. The book, *Organizational Moral Learning: A Communication Approach*, provides new methods to effectively talk about ethics and train people on ethics in a variety of organizations. The subtitle of the book is key: Bisel writes that the ways organizations communicate about ethics and moral values can affect how people demonstrate ethics in their actions.

While I'm not going to provide a full book review here, I do want to discuss a few cases that Bisel identifies in the book. He uses them to argue for a social intuitionist model of moral reasoning. One key point in this kind of model is that our intuitions guide our moral judgments; we frequently reason through a moral situation *after* intuition has led us to a judgment about it. A second key point in Bisel's model is that people in communities are affected by others. Sometimes people change their moral judgments in response to their communities, but those changes primarily come through adjustments to our intuitions and not to our powers of reasoning.

Bisel notes that organizations frequently assume that people will make better ethical decisions and behave more ethically if they have more information about ethics. These approaches assume that a deficit of knowledge leads to poor ethics and moral values. These assumptions also reinforce stereotypes about moral reasoning that have been around for centuries—that the heart (as the seat of emotion) hampers the ability of the head (as the seat of reason) to make good decisions. Additionally, such approaches typically have not proven to be effective over a long term.

Bisel writes that instead, we need to realize that actual ethical decisions made within organizations occur within webs of emotion, complexity, and context. It is inappropriate, he says, to keep viewing working adults as inadequate moral thinkers who need traditional training.

Wired for Moral Intuition

To demonstrate how humans are "wired" for moral intuition, Bisel identifies some cases from research. One article shows how preverbal infants can assess individuals on their behavior toward others. J. Kiley Hamlin, Karen Wynn, and Paul Bloom conducted experiments with 6- and 10-month-old infants using puppet shows. The puppets were simple shapes with eyes added. In one experiment, one puppet tried to climb a hill. After two attempts at climbing, the puppet would be either pushed up the hill by a helper or pushed down the hill by a hinderer. The helping and hindering puppets were consistent each time the infants watched, and infants watched multiple shows. After the shows, the infants were encouraged to choose between the helper and the hinderer, and they overwhelmingly chose the helping puppet.

In another set of puppet shows, infants saw interactions between a neutral puppet and either a helper or a hinderer. Infants strongly preferred the helping puppet over the neutral puppet, and the neutral puppet over the hindering puppet. The evidence suggests that humans can distinguish between positive and negative behavior toward others at an early age.

Bisel also discusses research by Antonio Damasio with a patient known as Elliot. Elliot was an intelligent individual who developed a tumor in the prefrontal cortex of his brain. After the tumor was removed, Elliot retained his intelligence, but Bisel writes that Elliot's intuitive and emotional equipment needed to narrow his field of decision making was lost or damaged. Elliot scored highly on the Standard Moral Issue Judgment test, but he struggled to decide what to do in specific situations. These decision-making struggles were evident in Elliot's personal life as well: Elliot was divorced twice after the tumor was removed, and he suffered after making poor business decisions as well.

Patient Elliot provides evidence for what is called the somatic-markers hypothesis, which says moral intuitions are a form of cognition and not contrary to it. Bisel notes that while Damasio conducted his research with Elliot well before magnetic resonance imagery was

This column features ethics scenarios and issues that may affect technical communicators in the many aspects of their jobs. If you have a possible solution to a scenario, your own case, or feedback in general, please contact column editor Russell Willerton at *russell.willerton@gmail.com.*

widely available, the somatic-markers hypothesis remains largely supported.

The Value of Dialogue About Ethics

Spoma Jovanovic and Roy V. Wood are both connected to the University of Denver. They had the opportunity to observe the development and implementation of a revised Code of Ethics and ethics training programs in the City of Denver over a four-year span, 2001 to 2005. They observed several ethics training sessions that followed a typical model: introductions of group members, a lecture on ethics, and discussion (usually perfunctory) of a case that led to a tidy resolution. Jovanovic and Wood recall a description from author Mark Pastin: such canned discussions reflect the "moral superiority of the uninvolved," in which it is easy to be righteous when the situation discussed is not personal.

At times, however, Jovanovic and Wood observed authentic discussions that focused on real questions that city workers faced. Should workers in the IT department use the city's buying power to order personal computers at a discount not available to the public? Should city personnel at conferences accept meals or event tickets from vendors? Should police personnel on duty accept discounted meals from ostensibly well-meaning restauranteurs? Each of these questions is layered with contextual constraints, expectations for politeness, potential for the appearance of impropriety, and practical problems to be solved.

Jovanovic and Wood provide these suggestions that advance a dialogue-focused way to approach ethics training: advance the ethos of the organization, show care for all relevant stakeholders, rely on real cases and the experiences of real people, and help participants talk to others about the ethical decisions they face in order to be ethically answerable and responsible.

Michael D. Mumford and colleagues were tasked with teaching research ethics to doctoral students in biological and social sciences. Their main approach was to use a sensemaking approach. Sensemaking occurs when people are presented with high-stakes events that are ambiguous or ill defined. Participants must choose or create mental models for these situations, which then provide a framework for gathering information, evaluating information, and choosing among available courses of action.

Training participants completed pre-tests and post-tests, including a follow-up six months later. The training involved ten modules over two days, six hours each day. Much of this time, however, was spent with students in small-group discussions of cases, discussions about the mental models they developed and applied, and role-playing exercises. Rather than merely listening to 12 hours of lecture about ethics, the students were able to discuss and apply the principles and guidelines instructors presented to them. Even after six months, follow-ups showed strong evidence that the training was effective.

Talk about Ethics in Your Communities

Bisel's book is interesting. Even though it's written in an academic style, I think it is approachable and that many professionals could benefit from it. One main point to take away from the book is that it is important for organizations to have a dialogue about ethics if they want to be ethical organizations. Typical instructor-led classes with canned ethics cases to review are not necessarily going to help people to have honest discussions with each other. Before these kinds of discussions can happen, people need to be able to trust each other, and they need to have the freedom to speak openly. Managers can't expect dialogue to happen if the conditions to support it are not in place. But if people can trust each other, honest dialogue can occur with discussions of real situations that occur in specific contexts.

Here are some ways you can promote dialogue about ethics:

- Find an ethics case (from *Intercom* or another place) that relates to your line of work. Ask a group of coworkers how the case is like or unlike what happens in your profession.
- Think of a situation that you or someone else has faced; take note of all the layers that make it complex. Then bring it to your manager for group discussion. (You may also send it to *Intercom*!)
- Accentuate the positive. Find an example within your organization of someone who went out of his or her way to do the right thing. Think about the values this person reflected, and consider how your organization can promote those values.

A true dialogue can be hard to achieve, and the experience can be fleeting. But it's important to take a first step to get a dialogue started.

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Mark Your Calendar

Organization Events Across the Globe

FYI lists information about nonprofit ventures only. Please send information to *intercom@stc.org.*

1 1-5 October
The **Human Factors in Ergonomics Society (HFES)** will hold its 2018 **International Annual Meeting** 1-5 October at the Philadelphia Marriott in Philadelphia, PA.
HFES
https://www.hfes.org/
http://cms.hfes.org/Cms/media/CmsImages/2018-AM-flyer.pdf

2 4-6 October
The **Council for Programs in Technical and Scientific Communication (CPTSC)** annual conference will be held 4-6 October 2018 at the Graduate Hotel in Minneapolis, MN.
CPTSC
https://cptsc.org/conference/

3 7-9 October
The **2018 Public Relations Society of America (PRSA) International Conference** will take place 7-9 October at the JW Marriott Hotel, Austin, TX.
PRSA
http://apps.prsa.org/Conferences/

4 24-27 October
The **American Translators Association (ATA)** will hold its **59th Annual Conference** 24-27 October at the New Orleans Marriott in New Orleans, LA.
ATA
https://www.atanet.org/conf/2018/

5 26-28 October
InterChange, the STC New England Chapter's annual technical communication conference, will take place 26-27 October at the UMass Lowell Inn and Conference Center in Lowell, MA.
InterChange
http://stcnewengland.org/interchange
admin@stcnewengland.org

6 1-3 November
The **American Medical Writers Association** will hold the **2018 AMWA Medical Writing & Communication Conference** 1-3 November at the Renaissance DC Downtown Hotel in Washington, DC.
AMWA
conference@amwa.org
240-238-0940

7 10-14 November
The **Association for Information Science and Technology (ASIS&T)** will hold its **81st Annual Meeting** 10-14 November at the Hyatt Regency Vancouver in Vancouver, BC, Canada.
ASIS&T
meetings@asist.org
301-495-0900

* STC-related event

From Intern to Team of One

BY MANDY MORGAN | *STC Member*

THERE IS SOMETHING so invigorating about being the first technical writer at a software company. It's even more fulfilling when a software company recognizes the need and importance of adding a technical writer to their team. After growing from intern to technical writer for a major software company in Chicago, I couldn't have been more thrilled to start a technical writer position for Sertifi. Sertifi is a frictionless business company, specializing in eSignatures and authorizations.

To get started as the first technical writer at a fast-paced software company, you need hard and soft skills and all your technical writer hats. Thankfully, in starting this position, I was able to draw on foundational skills from my bachelor's and master's degrees and my on-the-job experiences from four years as a part of a 12-person documentation team.

I encourage all technical writers to look into software as an opportunity to stretch yourself and learn new skills. There are so many facets to the software industry that writers can almost take their pick of where they want to be involved.

My path took me from eDiscovery and litigation, to ratings and reviews, and now to hospitality. What's most intriguing to me is finding the commonalities between diverse industries and then taking the tech writing formula and rewriting it to match.

I see technical writers as an elevated level of customer service. What I mean when I say that is I see myself as the in-house customer advocate. As technical writers, we're in a unique position to listen to the customer, understand their pain points, and take that feedback and use it as fuel to power our documentation. We can help our colleagues take a step back from the software they've been developing by asking the questions they never thought about. By doing this, we give a voice to our customers. My job is to make other people's lives easier—and I absolutely love what I do.

Starting out as the first writer for a company with no structured documentation can be as thrilling as it is challenging. My first order of business was to review the current landscape of our documentation. What did we already have, and what were we already doing well? From there, I started building my content strategy.

I took into consideration what we needed: audience analysis, personas, a style guide, a glossary, online documentation, videos, and developer and API documentation.

Knowing the fundamentals we needed helped to build relationships between myself and the other teams at Sertifi. I shared my content strategy and the benefits of each product I wanted to produce; not only for the customer benefits, but also for the benefits it would bring to other departments. For instance, my audience analysis can be shared with our marketing and customer success department, so that they can target the right audiences. By sharing my strategy with stakeholders from each department, I was able to learn more about the trends and customer types in the industry.

Technical writing should never occur in a silo—you need the opinions and questions of other people within your organization. Chances are, you have some industry experts that know what customers need. You can help by shedding light on what a technical writer does and show the value you can bring to the team. I don't spend my days strictly writing procedures; I also I help my company by aligning my content goals to overall business goals, so that we succeed together.

A lone, new writer isn't all strategy all the time. It's also about getting to the heart of the content, and fully understanding each and every piece of functionality in the software. Maybe not to the extent of a developer, but close enough that I can take the jargon and backend processes and make them easy-to-learn for both my internal colleagues and external stakeholders.

That's where the thrill of being a new and lone writer comes in—I'm responsible for shaping our content and the impression we make on our end users. I get to create the perception using my fundamental toolkit and by analyzing the trends in both the hospitality and tech comm industries. It's a unique opportunity to lend a hand to the customer right off the bat, and lead them and the company to a more intertwined partnership, via documentation.

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Points may be obtained the following ways:

Event	Points
STC Annual Membership (any membership type for Foundation certificants)	2
STC Recorded Webinar (self-study)	1
STC Live Educational Webinar (free, sponsored, and community webinars excluded)	2
STC Online Courses	6
STC Summit Pre-Conference Courses (full day)	6
STC Summit Pre-Conference Courses (half day)	3
STC Annual Summit	8
Begin and complete a college-accredited course related to the Technical Communication field	8
Published articles that relate to any aspect of *Technical Communication* (2/article)	2
Published books publicly available on topics related to *Technical Communication* (5/book)	5
Presentations at conferences related to aspects of *Technical Communication* (2/presentation)	2
Total needed within 2 years post-certification date	**12**

Fees

Exam fees: STC Members $250, Non-Members, $495

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